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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/936,148	09/07/2001	Takco Yamaguchi	NAII-1-17989	7918
26389	7590	02/23/2006	EXAMINER	
CHRISTENSEN, O'CONNOR, JOHNSON, KINDNESS, PLLC 1420 FIFTH AVENUE SUITE 2800 SEATTLE, WA 98101-2347			WEINER, LAURA S	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 02/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/936,148	<b>Applicant(s)</b> YAMAGUCHI ET AL.	
	<b>Examiner</b> Laura S. Weiner	<b>Art Unit</b> 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 January 2006.
- 2a) ☒ This action is FINAL.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-38, 42-58, 60, 61 and 63-71 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14-38, 42-57 and 66-71 is/are allowed.
- 6) ☒ Claim(s) 58, 60, 61, 64 and 65 is/are rejected.
- 7) ☒ Claim(s) 63 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments and Declaration filed 1-3-06 have been fully considered but they are not persuasive. The rejection of claims 58, 60-61, 64-65 under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Formato et al. (6,248,469) remains because Formato et al. teaches a solid polymer electrolyte membrane which include a porous substrate interpenetrated with an ion-conducting material. Formato et al. teaches in column 46, claim 1, that the porous substrate comprises a homopolymer or copolymer of a thermoset or thermoplastic aromatic polymer, etc. and the ion-conducting material comprises a homopolymer or copolymer of at least one of sulfonated, phosphonated or carboxylated ion conducting aromatic polymer or a perfluorinated ionomer. Formato et al. teaches in claim 13 that the thermoset or thermoplastic aromatic polymer substrate such as polyimide.

Since Formato et al. teaches that the porous substrate is interpenetrated with an ion-conducting material then inherently the pores of the porous substrate would be filled with the graft polymer and be bound to a surface of a pore must also be obtained.

In addition, the presently claimed property of the pores of the porous substrate would be filled with the graft polymer and bound to the surface of the pore would have obviously have been present once the Formato et al. product is provided. *In re Best*, 195 USPQ 433 (CCPA 1977).

***Claim Rejections - 35 USC § 102***

***Claim Rejections - 35 USC § 103***

2. Claims 58, 60-61, 64-65 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Formato et al. (6,248,469).

Formato et al. teaches a solid polymer electrolyte membrane which include a porous substrate interpenetrated with an ion-conducting material. These membranes are useful for fuel cells. Formato et al. teaches in column 46, claim 1, that the porous substrate comprises a homopolymer or copolymer of a thermoset or thermoplastic aromatic polymer, etc. and the ion-conducting material comprises a homopolymer or copolymer of at least one of sulfonated, phosphonated or carboxylated ion conducting aromatic polymer or a perfluorinated ionomer. Formato et al. teaches in claim 13 that the thermoset or thermoplastic aromatic polymer substrate such as polyimide. Formato et al. teaches in claims 33-36, a fuel cell comprising the composite solid polymer electrolyte membrane in which the fuel cell is a direct methanol fuel cell and has methanol permeation rate.

Since Formato et al. teaches that the porous substrate is interpenetrated with an ion-conducting material then inherently the pores of the porous substrate would be filled with the graft polymer and be bound to a surface of a pore must also be obtained.

In addition, the presently claimed property of the pores of the porous substrate would be filled with the graft polymer and bound to the surface of the pore would have

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obviously have been present once the Formato et al. product is provided. *In re Best*, 195 USPQ 433 (CCPA 1977).

***Allowable Subject Matter***

3. Claim 63 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 14-38, 42-57, 66-71 are allowed.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

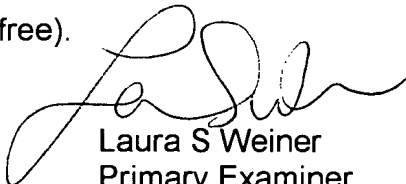
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura S. Weiner whose telephone number is 571-272-1294. The examiner can normally be reached on M-F (6:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Laura S Weiner  
Primary Examiner  
Art Unit 1745

February 21, 2006